Method for dynamically animating, processing and managing digitized images in Internet-based databases

5   The invention relates to a method for dynamically animating, processing and managing digitized images, in which the digitized images are integrated into an animated object which is also referred to as a film. An animated object generally comprises both digitized

10   images and text and audio data. When the animated object is reproduced, the digitized images are played back together with the text and audio data on a playback device, generally a computer. The invention also provides a device for dynamically animating,

15   processing and managing digitized images.

As a result of the increasingly widespread use of digital cameras and scanners, ever greater numbers of images are available stored in digitized form on

20   storage media. The storage media may be a memory of a personal computer (PC), a hard disk, a compact disc (CD), a digital versatile disk (DVD) or some other device for storing digitized data.

25   Various computer programs are known for managing and processing digitized images. Thus, every digital camera is generally supplied with software which permits the recorded images to be managed and processed.

30   Furthermore, computer programs for transferring digitized images to computers, embodied as Internet servers and referred to for short as servers, from online print services in which the transferred images are integrated into image albums ("web albums") are

35   widespread. The known computer programs which are supplied over the Internet by CD or by downloading have in common the fact that the processing of images, for

example the compression of the image data or post-processing of the brightness, selection of a detail of an image, post-processing of the colors or selection of a slide show template is carried out only

5   on a client computer (referred to for short as client), for example a PC, and cannot be managed on the server.

The web album of an online print service has a double function. On the one hand, image selection is made

10   possible in order to print out the images onto photographic paper. On the other hand, the image files which are assigned to the individual digitized images can be ordered and made available to third parties passively by way of an Internet link. The online print

15   services which are currently commercially available provide this functionality in order to make it easier to repeat order transactions and to tie in the users through the web album.

20   In order to combine image files processed on a PC using software having text and audio data and to make this combination available to third parties over the Internet even without a web album, programs are needed which are customary for the generation of web pages,

25   for example Adobe Photoshop and Flash MX. In addition, the person carrying out this process must have sufficient memory space on a computer which is connected to the Internet and which has an FTP access and on which various data processing programs, for

30   example CGI scripts or PHP, can be run. These requirements are fulfilled only to a limited degree by the memory space which is provided free of charge for home pages (referred to as free web space). Users of high-quality image processing programs, the use of

35   which requires at least about six months' familiarization time if they are also to be used for producing complex image applications which can be called via the Internet, can in fact create individual animated objects in the programming languages of Java,

AO 1384408.1

Java-Script (html) and ActionScript (Flash) and integrate them into web pages, but these animated objects are singular. This means that the sequence and the method in which the images are represented, for example the dissolves from one image to the next image and the text and/or audio data which is linked to the images can no longer be modified after the animated object has been finished.

Internet portals allow such objects to be created by web designers and make them available in turn to their users. A user can call such an object on the Internet from an Internet server and display it in an Internet browser if the Internet browser permits objects to be implemented in the format, for example Java or Active X in which the object is programmed.

Another format in which digitized images are offered to users on the Internet are what are referred to as video formats which can be displayed only with special programs, for example the Windows Media Player, Quicktime, the Realplayer etc.

To summarize, according to the prior art it is possible to differentiate four program classes which relate to the processing of digitized images:

1. Programs which are intended as auxiliary programs for use with scanners or digital cameras and are generally supplied with them.

2. Programs with which static images for printing out via an online print service are loaded into an image album (web album). These programs frequently have additional functions which permit, for example, the images to be stored in subdirectories or permit an electronic postcard (e-card) to be created.

3.   Professional image processing programs for creating image files and objects and animated objects for the Internet.

5   4.   Programs for processing and managing moving images (mpeg, video) which generate files in a video format which can only be played back with special playback programs (players, for example Windows Media Player, Realplayer, Quicktime).

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The object of the invention is to make available an improved method for managing digitized images, in which the digitized images are integrated into an animated object on the Internet in order to be called, and an

15   improved device for carrying out this method.

The object is achieved according to the invention by means of a method as claimed in patent claim 1 and a device as claimed in patent claim 16.

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The invention is based on the idea of transmitting digitized images to a server and storing them on it in a memory. The digitized images are assigned attribute data which defines the animation of the images in an

25   animated object, for example the sequence, the method of dissolving from one image to the next image etc. An Internet address is assigned to the stored digitized images and to the associated attribute data. If this Internet address is called, the server creates an

30   animated object using the digitized image data which is connected to the Internet address, and the associated attribute data. The advantage of this method is that the attribute data and individual digitized images can be exchanged or modified even after the object has

35   already been called by the Internet. For a user, there is no need for more detailed programming knowledge or extensive familiarization with professional image processing software in order to make his digitized images available to other users in an animated object.

AO 1384408.1

In addition, the animated object may be integrated as an html link on Internet pages so that search machines on the Internet can find the animated object and it becomes possible to search for the animated object in this way using the search machines. This is not possible with known animated objects which are integrated into an Internet page.

One advantageous embodiment of the method provides for the digitized image data to be expanded with compressed image data which respectively represents the represented digitized images in at least one lower digital resolution. This embodiment has the advantage that the digitized images are, on the one hand, stored on the server in a high resolution in which they were originally transmitted to the server so that they can, for example, be printed out on paper as high-resolution photos. On the other hand, the digitized images are additionally available in a resolution which is adapted to displaying the animated object on a computer screen. As a result, the quantity of data which has to be transmitted with the animated object is reduced without playback losses occurring during the display on the computer screen. In addition, it is possible to provide for the digitized images to be compressed in such a way that they are also available on the server in other resolutions, for example in a resolution ("Thumbnail" resolution) which is adapted to playing back the digitized images approximately in a thumbnail-size on a computer screen.

On the one hand, the digitized images can be transmitted directly to the server from an image capturing device, for example a digital camera or a scanner. Furthermore, it is possible to transmit the data to the server from a storage medium, for example a CD or DVD, using a suitable reading device. However, it is advantageous if image data which is stored on other computers or on peripherals which are connected to the

other computers can also be transmitted to the server. For this reason, one advantageous embodiment of the method provides for the step of transmitting the digitized image data to comprise transmitting the digitized image data via a network for exchanging data, with the network comprising the server and other network components, in particular at least one client. The network components may comprise, in particular, computers, digital cameras, scanners or a camera mobile phone (MMS mobile phone).

One further advantageous development of the method provides for the transmission of the digitized image data and the assignment of the attribute data to be controlled using the at least one client. In this embodiment of the method, it is possible, for example, for the client to cause image data which is stored on another network component to be transmitted to the server. In addition, the attribute data is acquired using the client, with the attribute data comprising, for example, the sequence and the selection of the individual digitized images which are to be incorporated into the animated object.

One advantageous refinement of the method according to the invention consists in the fact that a studio object is generated on the server and is transmitted to the at least one client and displayed on the at least one client using an Internet browser, with the transmission of the digitized image data and the allocation of the attribute data being controlled using the studio object. In this embodiment, an object is made available which can be displayed on the client and which makes it easier to manage the digitized images and to create the animated object. The studio object may, for example, make available input fields or switching buttons and selection lists which are used to select attribute data. As a result, it is possible, for example, to minimize the inputting of attribute data using a

AO 1384408.1

keyboard, making the method easier to carry out.

One advantageous development of the method provides that after the step of the transmission of the digitized image data to the server, the studio object is modified by the digitized images which are represented by the digitized image data being integrated into the studio object, and the modified studio object being transmitted to the at least one client, with essentially only parts of the modified studio object which have been modified being transmitted. In this way, the digitized images which are loaded onto the server are available in a graphic form on the at least one client so that the assignment of attribute data to them is made easier. In this context, the digitized images are generally displayed in the size of a fingernail so that the quantity of image data to be transmitted with the studio object is minimized. Essentially, only the parts of the modified studio object which have been modified are transmitted. This reduces further the quantity of data to be transmitted from the server to the at least one client.

One advantageous embodiment of the method provides that a user is authenticated. Authentication of the user makes it possible to assign to the user a memory area on the server or in the database which is implemented on the server in which said user can store his image data and attribute data. In addition, access by third parties to the data of the user is effectively prevented.

Another embodiment of the method according to the invention provides that the stored image and attribute data which is assigned to the Internet address is modified on the server by the user. This embodiment of the method provides the user with the possibility of modifying at any time the animated object which can be called by means of the Internet address. For example,

faults which are only discovered subsequently can be corrected. Even individual images or text and audio data can be subsequently modified in the animated object. For the user it is not necessary even to
5 produce a new animated object and transmit it to the server. Instead, when the Internet address is called the server generates in each case a current animated object whose form is defined by the modified, digitized image data and associated attribute data.
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In order to permit other users to access the object, one advantageous embodiment of the method provides for the Internet address to be transferred to another user.

15 One embodiment of the method provides for the animated object to be transmitted via the network and to be displayed in an animated fashion on another network component using an Internet browser. It is advantageous that the animated object can be displayed in an
20 Internet browser which is generally located on any network component which is connected to a network for exchanging data. There is no need for any extra software to be able to display the animated object.

25 One particularly advantageous embodiment of the method provides that attribute data which relates to the animated object, which is selected using input means of the other network component and which was used to generate the animated object is modified within the
30 animated object causing the animated display of the animated object to be modified. In this embodiment, anyone viewing the animated object on a network component is provided with the possibility of influencing selected attribute data which relates, for
35 example, to the speed of sequencing of the individual digitized images when playing back the animated object. In this embodiment, it is not necessary to generate the animated object again in order to do this. Instead, the animated object itself has the functionality allowing

individual attributes such as, for example, the speed of the image sequencing to be modified, said attributes having been defined as variable in advance by the user who has originally assigned the attribute data to the

5   digitized image data.

One particularly advantageous embodiment of the method according to the invention provides for the studio object and/or the animated object to be generated in

10   the Flash format. The advantage of this embodiment is that a widespread format is used which can be displayed with all current Internet browsers.

A further advantageous refinement of the method

15   provides that the attribute data comprises audio data and/or text data. This embodiment provides the possibility of creating animated objects which are particularly suitable for product presentation or for teaching purposes.

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Another advantageous embodiment of the method provides that an animated exemplary object is added to the studio object. This makes it possible for the user to study and test the functionality of the method without

25   having to transmit his own images to the server.

One embodiment of the method according to the invention in which different attribute data is assigned to the digitized image data and stored in the memory of the

30   server, and a different Internet address is assigned to the other attribute data and to the digitized image data, in which case, when the other Internet address is called, a different animated object is generated on the basis of the digitized image data and the different,

35   assigned attribute data, is advantageous for permitting different users to access different animated objects which may in some cases comprise identical digitized images.

AO 1384408.1

A further advantageous refinement of the method provides for meta data (for example URL supplements) to be added to the animated object. This makes it possible for search machines which search the Internet for

5 search terms to find the animated object and display it in a hit list if a term is being searched for which is contained in the meta data of the animated object.

In order to manage the digitized image data and the

10 assigned attribute data as efficiently as possible, one particularly advantageous embodiment of the method provides for the digitized image data and assigned attribute data to be managed using a database

15 The development of the invention in the dependent device claims correspondingly has the advantages described in conjunction with the associated method claims.

20 The invention will be explained in more detail below using an exemplary embodiment and with reference to a drawing, in which:

figure 1   is a schematic illustration of a device for
25   dynamically animating, processing and
              managing digitized images;
figure 2   is a schematic functional diagram of an
              embodiment of a device and of a method for
              dynamically animating, processing and
30   managing digitized image data;
figure 3   is an illustration of a studio object on a
              screen of a client; and
figure 4   is a schematic view of an animated object on
              a screen.
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Figure 1 illustrates a device 1 for dynamically animating, processing and managing digitized images. The device 1 comprises a server 2 which is configured as an Internet server. A network 3 for exchanging data

comprises network components, in particular the server 2 and other network components 4. The other network components 4 comprise, in particular, a client 5 to which a digital camera 6 and a scanner 7 are connected

5 as peripherals. In addition, the other network components 4 comprise a further client 8, a further digital camera 9, a further scanner 10 and an additional client 11 which are representative of further network components. Via receiver means 12, the

10 server 2 receives digitized image data which represents digitized images and is transmitted to the server 2. The digitized image data is expanded, by means of compression means 13, with compressed image data which respectively represents the represented digitized

15 images in at least one lower digital resolution. The compressed image data preferably represents the digitized images, on the one hand in a resolution which is intended to be used for displaying the animated object on a screen, and on the other hand in a

20 resolution ("Thumbnail" resolution) which is adapted for thumbnail-size display on the screen. The digitized image data which is expanded in this way is stored in a memory 14. The digitized image data is managed using a database. The memory 14 may be a memory which is

25 mounted directly in or on the server, or may be memory space which is assigned directly to another network component 4 but which the server 2 or a database program which is carried out on the server 2 can access, for example via the network 3 for exchanging

30 data.

The server 2 has assignment means 21 which assign attribute data which is assigned to the digitized image data, and store it in the memory 14. The transmission

35 of the digitized image data via the network 3 and the assignment of attribute data to the digitized image data are generally carried out using a studio object which is generated using studio object generating means 15. For this purpose, the studio object is transmitted,

for example, to the client 5 via the network 3 using transmitter means 16. The studio object is displayed on the client 5 using an Internet browser. The files which contain the digitized images which are transmitted to

5   the server 2 are defined using input means 17 of the client 5, for example a keyboard 18 or a mouse 19. At the same time it is defined whether the image data is transmitted to the server 2 directly from the client 5, the digital camera 6 which is connected to the

10   client 5, or the scanner 7 via the client 5 and the network 3 or whether the digitized image data is transmitted to the server from one of the other network components 4. As soon as the digitized image data has been transmitted to the server 2 and, as has already

15   been explained above, expanded with compressed image data and stored, the studio object is modified using modifying means 20 by virtue of the fact that the digitized images which are represented by the digitized image data are integrated into the studio object. The

20   compressed digitized image data which represents the digitized images in a resolution for a thumbnail-size display on a screen of the client 5 is preferably used in this context. The modified studio object is transmitted via the network 3 to the client 5, in which

25   case essentially only the data of the modified studio object which has been modified by the integration of the digitized images is transmitted. Then, attribute data is assigned to the digitized image data in the studio object. The attribute data comprises, in

30   particular, information about the selection of individual digitized images, their relative arrangement in a sequence, about the brightness and the color values for display and about text data and audio data etc. The attribute data is transmitted via the network

35   3 to the server 2 and assigned to the digitized image data and stored in the memory 14 using the assignment means 21. Address allocating means 22 assign an Internet address ("URL" - Uniform Resource Locator) to the digitized image data and associated attribute data.

AO 1384408.1

If the Internet address is called by the client 5 or the further client 8, an animated object is generated by object generating means 23 using the stored digitized image and attribute data which is assigned to

5 the Internet address. The animated object is then transmitted to the client 5 or the further client 8 using the transmitter means 16 and the network 3. The animated object is displayed on the client 5 or the further client 8 using an Internet browser.

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Selected attribute data which has been defined when the attribute data is allocated to the digitized image data can be modified in the animated object on the client 5 or the further client 8, as a result of which the

15 animated playback of the animated object is modified. For example, the speed of the successive display of the digitized images in the animated object can be modified.

20 The digitized image data and the attribute data are generally allocated to a user who has originally initiated the transmission to the server 2 and the allocation of the attribute data. This user is generally allocated a memory area in the memory 14 of

25 the server 2. After he has defined an animated object by allocating the attribute data to the digitized image data, access to said object is made possible via the assigned Internet address to anyone who calls it from the server 2 using the Internet address. In order to

30 permit a further user to access the animated object, the user merely has to transfer the Internet address to the further user.

The animated object which is defined using the

35 digitized image data and associated attribute data is however not static. The user who has originally defined it can modify the digitized image data and/or attribute data using modification means 25 after he has been authenticated using authentication means 24.

AO 1384408.1

The digitized object does not need to be transferred again to the further user. If the further user calls the animated object from the server 2 using the Internet address, the animated object is generated on the basis of the modified digitized image data and attribute data and transferred to the further user. In this sense, the animated object is therefore dynamic.

Using the studio object it is also possible to select individual digitized images from the digitized image data which is transmitted to an online print service in order to produce paper copies of the digitized images. Likewise, the studio object can be used to generate an electronic postcard (e-card) from individual digitized images. The studio object can provide further functionalities such as those of conventional web albums, for example the transmission of individual digitized images by e-mail.

The digitized image data and associated attribute data are managed in the memory using a database program. The digitized image data can be combined with a plurality of animated objects, i.e. with a plurality of sets of attribute data. Each of these animated objects is allocated its own Internet address.

Figure 2 shows a schematic illustration of a functional diagram for an embodiment of a device and a method for creating a dynamically animated object and for managing digitized image data. Digitized image data which represents digitized images in the form of image files 32 which are originally stored on a PC hard disk 33, in a web album 34 or on some other storage medium on the Internet 35, is transmitted, using what are referred to as upload clients 31, 31', 31'', to a server 36 which is connected to a database 37. The digitized image data can also be transmitted directly to the server 36 from one of the upload clients 31, as is indicated by means

AO 1384408.1

of an arrow 38. The database is configured in such a way that it can also directly access storage media, for example the PC hard disk 33, which are not directly assigned to the server 36.

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The images which are represented by the digitized image data 32 are compressed 39 on the server 36. In this context, the digitized image data is supplemented with compressed image data which respectively represents the

10 represented images in at least one lower digital resolution. The digitized image data is transferred into an image store 40 and stored. Individual images can be transmitted 41 by e-mail or printed out 42 from the image store 40, the printing out being carried out

15 on a printer 43.

Attribute data is assigned 44 to the images in the image store 40. This attribute data comprises, for example, information about the selection of individual

20 images from the image store 40 and their arrangement in a sequence, about the selection of a template for the animated object, about a name for the animated object, information about the time sequence when playing back the animated object etc. The attribute data is stored

25 45 so that the database performs an assignment of the attribute data to the digitized image data. In addition, an Internet address is assigned to the attribute data and the digitized image data.

30 An end user 46 opens an Internet browser 47 whose program data is stored on the PC hard disk 33. The end user 46 calls the Internet address using the Internet browser 47. The server 36 then generates the animated object on the basis of the digitized image data which

35 is connected to the Internet address, and of the attribute data which is assigned to the digitized image data. The animated object is then transmitted from the server 36 to the Internet browser 47 in which it is displayed 48.

AO 1384408.1

Figure 3 shows the display of an exemplary studio object 100 on a screen. An image database 101 in which individual digitized images 102, which have already been loaded into the image database 101, are displayed is displayed in the lower region. The transmission of an image file to the server 2 (figure 1) is brought about using a selector button "upload image" (upload) 103. The location from which the data is to be transmitted to the server 2 is determined in a further dialogue. This may be done by specifying a file on a local hard disk or a network address from which the digitized image data can be called. An image file is selected in the further dialogue. If the image file is located on a storage medium of the client on whose screen the studio object 100 is displayed, or a storage medium which is connected directly thereto, an image or a plurality of images are presented as a preview. If the image or images is/are detected as the image/images desired for uploading, the uploading to the server 2 (figure 1) is brought about. Individual images can be deleted from the image database 101 using the selector button "delete image" 104.

Just below the center of the display of the studio object 100 on the screen there is a line 105 for selecting an animated object which is also referred to as a film. The line 105 comprises four buttons 106, 107, 108 and 109. Using the selector button "load" 106 it is possible to load an animated object which has already been defined. Using the selector button "rename animated object" it is possible to rename an animated object and using the selector button "delete animated object" 108 it is possible to delete completely an animated object and using the selector button "new animated object" 109 a new animated object is opened. A name is assigned to the new animated object and displayed in a field 110 "loaded animated object". After a user has been authenticated, firstly an

animated demonstration object (a demonstration film) is loaded in the studio object 100. The user can test the functionality of the studio object 100 using this demonstration object without having to transmit his own

5   digitized image data to the server 2 in advance (figure 1).

The digitized images 111 which are associated with the animated demonstration object or the selected animated

10   object are shown in the top half of the display on the screen. Using the known drag & drop functionality it is possible to arrange images from the image database 101 in a sequence. Each image in the sequence is assigned an "image selection surface" 112. Marking one of the

15   "image selection surfaces" 112 causes the attribute data assigned to the respective image to be displayed. This may be a text which is displayed in an image text field 113. Information relating to the formatting of the text (font, any emphasis through bold printing

20   etc.) is displayed or selected in an image text format field 114. In addition, the user selects a preprogrammed template for the animated object in a "film templates" field 115, said template determining the way in which the images are presented. These

25   templates may differ from one another, for example, in different types of dissolves such as fading in and fading out, circular dissolve, strip dissolve, lozenge-shaped dissolve etc. Other preprogrammed templates may provide a gallery with a control means

30   with which the images are presented in a frame with a controllable "jump 'n run". Yet another template presents the starting image as a puzzle to be solved. In the "audio templates" field 116 the user can select sound data which is played back together with the

35   images in the animated object. Using a "link insert" field 117 the user can specify an Internet address or e-mail address which is displayed as a hyperlink when the animated object is played back. It is possible to select whether a new window is opened when the

AO 1384408.1

hyperlink is clicked on or whether the link is displayed as a popup in the window of the playback of the animated object. In addition, it is possible to specify in the "image format" field 118 whether the
5   images of the animated object are to be displayed in the portrait or landscape format. In a further attribute field 119 it is possible to define the speed of the image sequencing and the brightness and color values of the images. After a complete set of attribute
10 data, also comprising, for example, the selection of the individual digitized images and their sequence, has been defined, a "save" button 120 is used to transmit the attribute data to the server 2 (figure 1) and store it there.

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A "transmit film" button 121 is used to make the animated object accessible to a further user. On the one hand, the Internet address which is assigned to the digitized image data and associated attribute data can
20 be transmitted to the further user. A further possibility provides for the animated object itself to be transmitted to the further user by e-mail as an attached Flash file. A text can also be added to the e-mail.

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A selector button "print image" 122 can be used to print out one or more images. The images can be printed out on a printer which is connected to the client on which the studio object is displayed, or printing can
30 be carried out via an online print service. One or more images can be transmitted by e-mail using a selector button "transmit image" 123.

An online help function can be triggered using a "help"
35 button 124. Using a "preview" button 125 an Internet address which is assigned to the animated object which has just been defined is called from the server 2 (cf. figure 1). The animated object is generated on the server 2 on the basis of the digitized image data and

AO 1384408.1

associated attribute data. The animated object is then transmitted over the network 3 and can be displayed on the client 5 using the Internet browser (cf. figures 1 and 2).

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Figure 4 shows a typical view of an animated object 200. The animated object 200 comprises a playback field 201 in which the digitized images are displayed in an animated fashion. In an image field 202, a box 203 is
10   displayed for each image of the animated object, said box 203 having a number which corresponds to the position of the image in the field. The box 203 which corresponds to the digitized image which is displayed in the playback field 203 is respectively marked during
15   the playback. Selected attribute data, for example the brightness values and color values, the speed of the image sequencing etc. can be changed by means of a "settings" field 204 provided that the user who has defined the animated object has made provision for this
20   when creating the animated object.

Operator control buttons 205, 206, 207, 208, 209 can be used to control the playback of the animated object. Using the "sound on/off" button 205 it is possible to
25   switch the sound on or off during the playback. Using the "forward" button 206 it is possible to jump forward in the sequence of the images of the animated object. The "pause" button 207 pauses the playback of the animated object. The "play" button 208 activates the
30   playing back of the animated object. The "reverse" button 209 permits the sequence of the images of the animated object to be jumped through in reverse.

The animated object also comprises a banner field 210
35   in which, for example, an advertising graphic can be displayed. The text which is associated with the played-back, digitized image is displayed in each case in a text field 211. A hyperlink which has been assigned to the animated object as an attribute is

AO 1384408.1

displayed in a link field 212.

One embodiment provides for digitized image data which represents one or more digitized images and has been recorded and/or transferred from a camera mobile phone or some other mobile phone device, for example a digital camera with mobile phone capability, is transmitted to the server. The digitized image data is transferred in the form of a multimedia message (MMS), for example via a telephone network. During the transfer, digital identification data, for example the telephone number of the camera mobile phone from which the MMS is transferred, is transmitted together with the digitized image data. This digital identification data is used to assign the digitized image data from an identification module to a user who is identified by this digital identification data. A recoding unit recodes the digitized image data in such a way that it is present in the same image data format as the other digitized image data which is transmitted to the server. In this way, the recoding can be adapted to the respective digital resolution of the digitized images contained in the MMS. The digitized image data is generally encoded in a "/9j/flash" format in an MMS. The recoding unit firstly encodes the digitized image data to base 64. The digitized image data is then decoded, for example in the jpg format (an image encoding standard developed by the Joint Photographic Experts Group). Since the resolution of the digitized images which are represented by the digitized image data which is transmitted using the MMS is often lower than that of the other images which are transmitted to the server and are represented by the digitized image data, background data is added to the digitized image data which is transmitted with the MMS so that the respectively represented digitized images are not distorted. They are then present on the server (together with the added background/frame) in the same digital resolution as the other represented digitized

AO 1384408.1

images. The digitized images or image data which are/is transmitted to the server using an MMS can be processed in the same way as the other digitized image data, in particular integrated into an animated object, transmitted individually by e-mail or transferred to an online print service. This embodiment is used to provide compatibility between the digitized image data which is transmitted using an MMS and the other digitized image data which is transmitted to the server and is present in an image data format which is known in the prior art. Common image processing of these (originally) different image data formats is made possible in this way.

The features of the invention which are disclosed in the above description and drawing can either be of significance individually or else in any desired combination for the implementation of the invention in its various embodiments.